

REMARKS

Independent claims 1, 9, 13 and 18 have been amended by this Response. Claim 6 has been previously canceled. Claims 1-5 and 7-21 remain pending in this application. Applicants respectfully request further examination of the application, as amended.

Claim Rejection Under 35 U.S.C. §103

The Examiner maintains the same rejection set forth in the previous Office Action. Specifically, claims 1-5 and 7-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Ostlund* (U.S. Patent No. 5,699,178 to Ostlund) in view of *Vujkovic-Cvijin*, U.S. Published Patent Application No. US 2003/0039015 of Vujkovic-Cvijin et al. Applicants have amended the independent claims to clarify what was and still is being claimed, but otherwise respectfully traverse the rejection.

Upon careful study of the Examiner's comments ("*Response to Arguments*") in the previous Office Action, Applicants believe that the Examiner may be misconstruing the term "non-absolute frequency" in Applicants' claims or affording it an overly broad interpretation. In response to the previous Office Action, Applicants stressed that *Ostlund* discloses adjusting the wavelength of a transmission laser until it matches the absolute wavelength or channel wavelength with which it is desired for the laser to transmit information. More specifically, *Ostlund* discloses receiving a reference carrier signal at a node, and comparing the wavelength of the carrier of the node's transmission laser with the wavelength of the reference carrier signal and with a "correct wavelength" to which the node shall be stabilized" (See Col. 2, lines 37-42) (emphasis added). "The logical unit must know which wavelength the transmitter shall have. The logical unit will receive this information from the main control system of the network." (Col. 5, lines 29-30). A key point to note is that there exists some "correct wavelength" (i.e., defining the transmitter's channel), known or defined in advance of performing the wavelength adjustment.

In contrast, in Applicants' invention, there is no "correct" or "absolute" wavelength or frequency for a channel. For example, Applicants' invention does not attempt to

counter the inevitable frequency reference drift by adjusting the channel frequencies until they match some set of “correct” or “absolute” frequencies. Rather, Applicants’ invention takes whatever frequency the reference may be at the moment (as it is inherently subject to drifting), and aligns one of the channels (of the tunable multi-channel device) to it, whereupon the other channels are in turn re-defined with respect to that one channel by virtue of the stable, defined frequency differences between adjacent channels. Applicants’ invention accepts slight frequency reference drift as inevitable, and simply re-defines the channels with respect to whatever frequency the reference may have drifted to. So long as all nodes have the same frequency reference—regardless of what absolute frequency value it may have—and all nodes maintain the same spacing or difference between adjacent channels, all nodes can be tuned to the same re-defined channels and thereby communicate with one another (i.e., transmit and receive information via those channels). As stated in the specification at paragraph 0042: “Frequency aligning one of the channels of the multi-channel device 7 with the non-absolute frequency reference 8 changes the frequencies of all of the channels of the multi-channel device 7 but leaves the frequency differences between the channels unchanged”

The Examiner appears to misinterpret Applicants’ definition of “absolute frequency.” To clarify, an absolute frequency is not necessarily one defined by ITU frequency and channel spacing standards, but rather one that is pre-defined in *any* manner, whether by the ITU or a manufacturer or user. In Applicants’ invention, there are essentially no precisely predefined channels; rather, the channels can be thought of as floating or re-definable. When the frequency reference drifts, the frequency alignment that occurs at each node correspondingly shifts or re-defines the channel frequencies. Although Applicants believe that the claims as originally filed conveyed this aspect of the invention, Applicants have amended independent claims 1, 9, 13 and 18 for emphasis.

The Examiner acknowledges that *Ostlund* does not disclose a tunable multi-channel device generating channels with equal channel spacing and frequency-aligning one of the channels with the non-absolute frequency reference, but maintains that this aspect of the invention is disclosed in *Vujkovic-Cvijin* and that it would have been

obvious to a person of ordinary skill in the art to combine these teachings to arrive at the invention as set forth in the claims. Applicants respectfully disagree. Not only does *Ostlund* not disclose defining channels in a non-absolute manner, but there would have been no reason for a person of ordinary skill in the art to have considered aligning one channel frequency to an (inevitably drifting or otherwise non-absolute) frequency reference and then re-defining the other channels according to an equal channel spacing therefrom (e.g., defined using an etalon as disclosed in *Vujkovic-Cvijin*). Like *Ostlund*, *Vujkovic-Cvijin* relates to a system that uses absolute frequencies: “Each laser is actively locked to a set of equally spaced wavelengths according to the ITU frequency grid” (§ 0029, lines 1-4); “The absolute wavelength standard is provided by a gas absorption cell.” (*Id.*, lines 7-8). Thus, frequency drift away from the absolute channel values is countered or corrected (i.e., “actively locked”), not used to correspondingly re-define the system channels. Neither *Ostlund* nor *Vujkovic-Cvijin* teaches or suggests *allowing* the channel frequencies to deviate from pre-defined or absolute values.

Each of independent claims 1, 9, 13, and 18 recites at least the features of the invention discussed above, which are not taught or suggested by *Ostlund* or *Vujkovic-Cvijin*, taken alone or in combination. Accordingly, it is respectfully submitted that the invention as set forth in these claims would not have been obvious to a person of ordinary skill in the art. Claims 2-5, 7-12, 14-17, and 19-21 depend from the independent claims and are believed non-obvious for at least the same reasons.

CONCLUSION

In view of the foregoing, Applicants believe the rejections have been overcome and/or successfully traversed, and that the application is now in condition for allowance. Should there be any further questions or concerns, the Examiner is urged to telephone the undersigned attorney.

Respectfully submitted,

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